

37th Annual Meeting. APS Division of Plasma Physics

6-10 November 1995, Louisville, KY

Abstract Submittal Form

Deadline: Friday, 7 July 1995

Subject Classification Category 4.8 ICF Diagnostics
(refer to the DPP Category list in APS Meeting News)

☒ Theory ☐ Experiment

Simulations of X-Ray Laser Probing of Hohlraums.* R. A. London, C. Decker, L. V. Powers, J. A. Harte, J. E. Trebes, R. Cauble, A. S. Wan, L. B. Da Silva, *Lawrence Livermore National Laboratory*
We present simulations used to design and analyze experiments at Livermore's Nova 10-Beam Laser Facility to measure electron densities in hohlraums with x-ray lasers. Simulations of three probing methods were performed: straight imaging using the x-ray laser as a back-lighter, Moiré deflectometer which measures the deflections (due to refraction by the electron density gradients) of x rays traveling through the hohlraum, and interferometry, which measures the phase shifts (due to electron density) of the x rays. Calculations show that the self emission to be much lower than that of the probing beam giving a very good signal to noise ratio. The Moiré and interferometer simulations show that experimentally measurable fringe shifts should be obtained. In conclusion, simulations indicate x-ray laser probing appears to be a powerful method to characterize hohlraum plasmas.

** Work performed under the auspices of the U. S. Department of Energy by LLNL under contract number W-7405-ENG-48.*

- ☐ Prefer Poster Session
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Submitted by:

(Signature of APS Member)

Richard London

(Same Name Typewritten)

Lawrence Livermore National Laboratory

(Affiliation)

(510) 423-2021 (phone) (510) 423-9208 (Fax)

(Phone/Fax)

london@llnl.gov

(Email Address)

A faxed copy is NOT acceptable. This form, or a computer-generated form, plus TWO COPIES must be received by **Friday, 7 July 1995** at the following address:

Meetings Department • DPP 37th Annual Meeting
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One Physics Ellipse
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